

sure are, the prevention of the spread of fire and the generation and extension of disease.

Try, Sir, to plan a new fourth-rate house, containing 11 squares, 99 feet, and to put in as many rooms as you can, just about one square each, to satisfy the law; and I shrewdly suspect that you will find it hold at least twenty-eight rooms; and if each of them be let to a separate family of the usual average of five persons, then a fourth-rate house may be legally occupied by one hundred and forty men, women, and children.

If they look but for a moment at the horrible depravity, which must be expected to ensue, at the disease which may be engendered and spread through such a living mass, at the demoralizing filthiness which will be forced upon them (for the bill requires only one privy for one house), at the imminent risk of the occurrence of fire, and at the chance of the walls of such a house falling, when gutted by fire, I cannot but think the legislature will see it to be irresistibly necessary that they should recur to the existing system.

They have but to ascertain what have been the inconveniences of the Building Act with respect to rating, and then it will be easy to provide a remedy. I apprehend the most open course is the increase of surface to be comprehended in each rate, and some reasonable limitation of the extent to which future additions, upon the ground plan, may be carried.

In commenting upon the provisions made as to construction, it may keep a wholesome check upon our views, if we consider the leading requisites of a good house; complete drainage, firm foundation, thorough ventilation, adequate strength.

Had the legislature to do only with unselfish beings, they need but to ask that every precaution should be taken to insure them all; and every respectable architect and builder might safely be trusted without further direction, if not from higher feeling, certainly from the bare circumstance of both being peculiarly interested in building strong enough. But our wide-awake friend John Chinaman has a prudential maxim, "Never trust a man who builds houses to sell." There are wandering, reckless, speculating builders (as they call themselves), men who only build to sell, who must, on the part of the public, on the part of the proprietor of the soil, and on the part of purchasers, be restrained.

I cannot walk the environs of London without seeing at every turn houses built with the filthiest old bricks and bats, timbered with wormeaten or other thin and defective wood, and plastered with "billy-sweet;" but as smart as new pins externally. The floors tremble and windows rattle as you tread, while the winds and rains of heaven spin through in all directions; and, seeing these, I feel assured it is absolutely necessary, that both the substance of the walls and of the timbering should be defined by law; but law which, while framed stringently enough to check this cankerous evil, shall not unnecessarily cramp those who seek to act uprightly.

As to the needful thickness of a wall, with respect to the support of weight, and the resistance of fire:—

It might be made matter of calculation, what vertical weight one course of fourteen-inch sound stock brickwork would bear uninjured, and from that to deduce how high a superincumbent wall may be built: as also, what quantity of fuel would be necessary to heat such a wall so thoroughly as to ignite wood on the other side of it. I dare say, all this might be satisfactorily arrived at. But without it, I apprehend that I may safely challenge the production of any instance of a sound fourteen-inch wall of thoroughly-burnt stock bricks crashing under any inconstant weight, or of fire communicating through such a wall; although eighteen-inch walls of very bad place bricks have crashed under their own weight, and I well remember the dread experienced in passing, for examination, alongside a four-feet wall of similarly bad materials, which was crushed and split in all directions. I am satisfied that it is not thickness of wall, but soundness of material, that assures needful strength; and that a very thin wall will check fire was plainly shown by that furious conflagration at Hamburg having been stayed in one direction by a one-brick wall.

If this be so; if fourteen-inch walls are so strong for both objects, one plain provision, that there should always be one unbroken, unutilized sheet of fourteen-inch wall everywhere, between all contiguous houses, would be sufficient; and builders might safely be left to add, wherever they might see fit; but as all may not be equally skilful, or far-seeing, it may not be unnecessary to provide that, wherever walls exceed some stated height, say fifty feet, some definite portion, as at least one-fifth, should be two bricks thick; and for stacks of warehouses, or other commercial places of deposit, another half-brick throughout would render security doubly sure.

I would not suffer recess, or chase, or flue, or

space for the end of timber, in any place to interrupt the entirety of the fourteen inches; and I will never libel "the craft" so much as to suppose for a moment that they cannot devise means of supporting the floors, and lying in the walls, and concealing soil-pipes, without wounding the party wall.

As to the chimney-breasts, if there be any well-authenticated instance of a house having been burnt in consequence of the breast of a chimney, or the withs and rims of flues, in dwelling-houses, being only half a brick thick, then it may be prudent to insist upon thicker work. But, not yet believing that such proof can be adduced, I see no reason whatever for making them one brick thick.

With a solid fourteen inches between house and house, with half-brick withs and breasts, there cannot be a hundred-thousandth part of the risk which attends muslin curtains; but it may by possibility be well to provide that kitchen chimneys, and those of other places where enormous fires are customarily made, shall have nine-inch breasts the whole height of the story to which they appertain.

There is, indeed, something altogether so oddly ridiculous in the framers of the bill requiring nine-inch withs and rims, that I have a very wicked suspicion, some exceedingly funny fellow has been playing upon their easy credulity, and chuckling in his sleeve at the monstrosities which would grow out of them. Heaven help the graceful combinations of the Tudor style, and save us from the "Victoria squabs!"

Doubtless some duller being, some "solid upon solid and void over void" man prompted the provision that chimney-breasts shall, in future, be carried up of equal width throughout, and interdicted corbelling over, excepting for one breast only in an upper story. I most respectfully entreat the promoters of the bill to examine any ancient cathedral, or to walk through their own baronial halls, or to contemplate their own machicolated towers, and satisfy themselves, as men of common sense, whether there be any insecurity in the principle of corbelling. As a very, very humble man, untaught in schools, unenlightened by travel, and possessed of very little mother-wit, I yet assure them, and every practical bricklayer will do the same, that corbelling over, at the same time sidewise from a breast and frontwise from a party wall, is attended by no risk whatever, in common mortar. Where a whole breast has to project from a wall, there a little more care is requisite. It is often done upon stone or iron. By your vile, scamping builders, it may have been insecurely done, but that is no just reason for wholly interdicting it. Stone, and cast iron, otherwise the fitter things for such a purpose, will flay under the joint action of fire and cold water. I much prefer corbelling with brickwork set in cement, a process which is, in fact, building a stone, and that, one which will not spall off in the fire.

Even were it as true as it is false, that corbelling cannot be made secure, there cannot possibly be any valid objection to springing an arch from sufficient piers, and carrying the upper breasts upon that. The allowing recourse to such an expedient would save from incalculable injury the narrow shops of London, and enable architects to avoid unsightly blemishes in the fairest rooms of the fairest mansions.

If these concessions be not made, the double stack in a full-sized first-rate must either be fourteen feet three inches in breadth, and four feet seven inches in thickness; or seventeen feet two inches in breadth, and three feet nine inches in thickness; and in inferior rates, the breadths alone will be less, but the thickness will remain the same.

This really is too bad.

Differing as I do from the framers of the bill, I also differ from the "Master Carpenters' Society." Flues ought not to be carried up within the thickness of party walls. It is now done only by an unscrupulous evasion of the letter of the existing act, and ought not to be tolerated for an instant. It may be, it very probably is, true, that there is no well-accredited instance of a house having been burnt from such a cause, but it is no very pleasant affair to have a wall so hot as to blister off the paint, and almost to scorch your hand.

Requiring that no part of a party wall should be less than fourteen inches, it is also advisable that no external wall should be less than fourteen inches: first, because that it is necessarily weakened by the openings; next, because that with a nine-inch wall you cannot tail the joints on sufficiently; and further, because that a nine-inch wall will not resist a driving rain. I would even make the parapets fourteen inches thick, as they suffer most from the weather; and, remembering the righteous precaution of the Mosaic law, I would with all my soul insist upon their being carried up three feet above the gutters; lest I should have any man's blood upon my head. The legislature has not merely to consider bricklayers, whose daily habits render them secure, even without a parapet, but has also to protect females and children, who may, in terror, be endeavouring to escape from fire.

The bill intends to prevent the formation of recesses, and even blank windows in external walls; but it has been overlooked, that it is much better to form a blank window than a window may at some future time be wanted, than to break a way through a solid wall. I take it, that very few builders would make blanks unnecessarily. The cost of additional labour generally counterbalances any petty saving of material. "De minimis non curat lex." It is paltry legislation, and had much better be omitted.

But, Sir, although I quite agree with the highly respectable gentlemen who are said to have drawn the bill, and whose better judgment has possibly been overborne by benevolent, but unpractised law-makers, that, in the abstract, no party or external wall ought to be less than fourteen inches thick; yet, it would be most oppressively unjust to require every honestly built fourth-rate house of the existing law, when rebuilt, to have fourteen-inch walls. They are wretchedly cramped already, and can ill afford to lose nine inches of space depthwise, and half that quantity widthwise (nine-inch chimney-breasts and withs are altogether out of the field, the government cannot stultify itself by making such a law). As a middle course, I would very humbly suggest, that a choler might advantageously be left to the owners; either that they should rebuild with fourteen-inch walls set in mortar, or nine-inch walls set in cement. The space saved would repay the cost. The houses would be equally substantial and impervious to the weather; but, above all other considerations, the people will be satisfied that justice has been tempered with mercy.

I think that I have now arrived at the proper place for comment upon the materials to be used.

Willingly, and if building for myself, I would not allow any thing but new and sound stock bricks to be used anywhere; but it certainly requires very mature reflection, before one should absolutely prohibit the use of imperfectly burnt or place bricks in houses. They would not be entirely lost, it is true; they might be used in fence-walls, they might be sent out of the metropolitan district; but that would only remove the evil of bad building farther away.

Looking to one principal point of the bill, that the spread of fire and danger to passers-by should be prevented, I would suggest, for the consideration of better heads than mine, that it might be made imperative, that the party walls and chimneys, and the front (and flank walls, if they adjoin a public way) walls shall absolutely, and with no reserve, be built of none other than new thoroughly burnt or stock bricks, with such superior kind of brick for facing as the builder may please; but that, if the owner be unwise enough to use inferior or old bricks in the back walls and in partition walls, he may do so.

I doubt not, Sir, that there will be some exclamation of surprise at, and dissent from, my opinion as to old bricks. No one can deny that, lack of suction excepted, a clean, sound stock brick is equally as good, and it may even be better than many new bricks; but human nature, although in builders, is but human nature still; and if bricklayers do not know it, the public will tell them, that if once a clean old brick is allowed to be used, thousands out of cesspools and sewers will be spirited into a wall. It is a sad truth, but we must even gulp it down.

I am aware there may be some objection to the definition of the components parts of mortar by law; but I cannot shut my eyes to the very common practice, among disreputable men, of mixing garden mould or brick rubbish with a little lime, and calling it mortar. Our early ancestors, Saxons, or Normans, used lime and loam, and deemed it very good mortar; still I cannot think that much harm can ensue if the law say, that neither vegetable earth, nor any kind of rubbish, shall be used as a component part of the mortar to be used in building. The refuse lime of sugar-works or "billy-sweet," might very advantageously be forbidden. It would much strengthen the district surveyors' hands.

I regret much the having again to differ from the Master Carpenters' Society; but, while I do so in all becoming humility, I also stoutly assert my right, as an Englishman, to my own private judgment, such as it is; and acting, I trust, upon a well-curbed exercise of that judgment, I distinctly say it is as absolutely necessary for the public welfare that the scantling of timber should be regulated by law, so that the thickness of walls should be so regulated. I do not go quite so far as to say the act *recensum secundo Caroli II.* should be the standard; although I am satisfied the errors of Sir Christopher Wren (who may fairly be supposed to have been then consulted), if errors they be, were on the right side. The errors of the present bill are altogether in the opposite direction. I should hesitate, if I were building on my own account, to use such slight scantlings as are set down for the floors; and as to those for roofs, so little care has been taken, that pulleys and rafters may have fifty feet